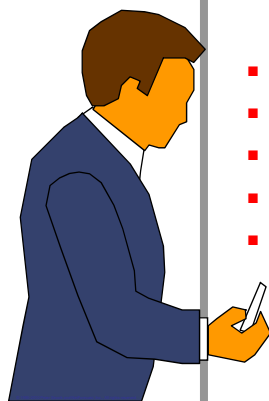


Service Level Management With Apdex

Peter Sevcik
Executive Director, Apdex Alliance
President, NetForecast
peter@netforecast.com
434 249 1310



Outline



- **Apdex Overview**
- **Apdex Parameters**
- **Apdex Scope**
- **Apdex in Service Level Management**
- **Apdex SLM Case Studies**

Apdex Defined

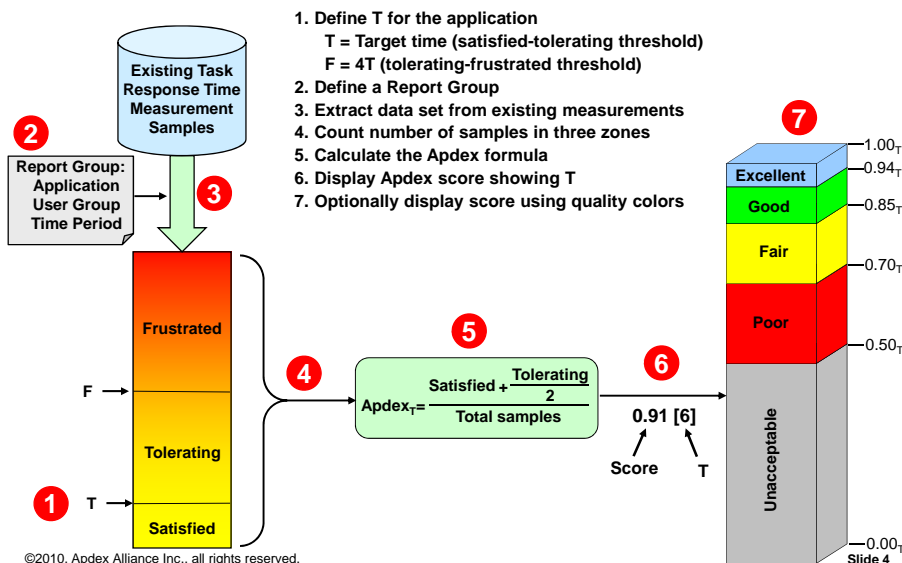


- Apdex is a numerical measure of user satisfaction with the performance of enterprise applications
- It defines a method that converts many measurements into one number
 - Uniform 0-1 scale
 - 0 = no users satisfied
 - 1 = all users satisfied
- Standardized method that is a comparable metric across
 - Applications,
 - Measurement approaches, and
 - Enterprises

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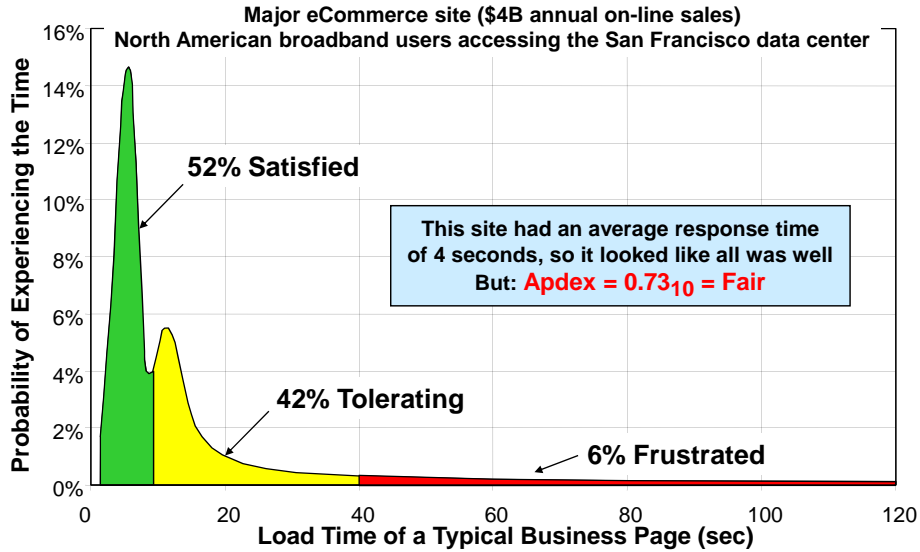
Slide 3

How Apdex Works

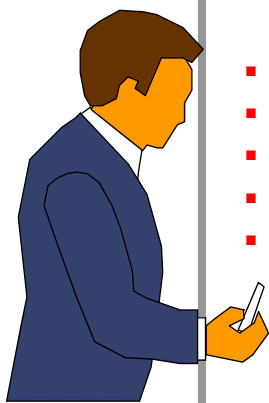


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Case Study: B-to-B Commerce Website

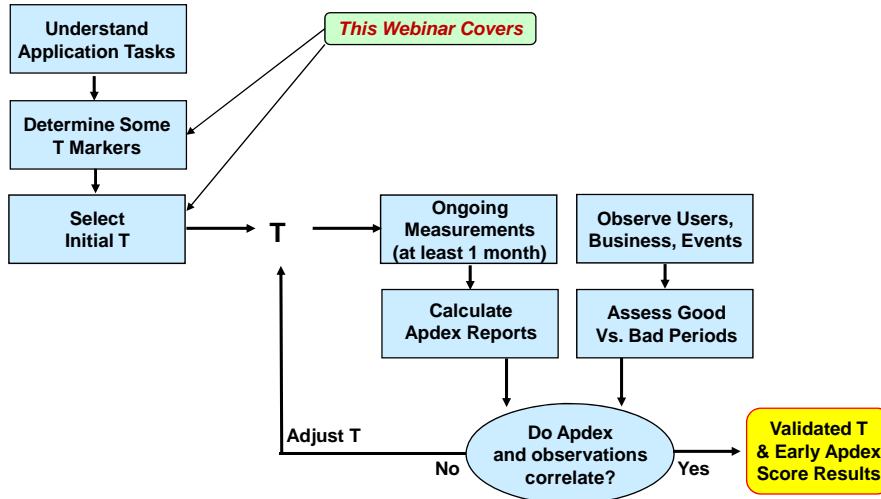


Outline



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Process for Setting the Apdex T



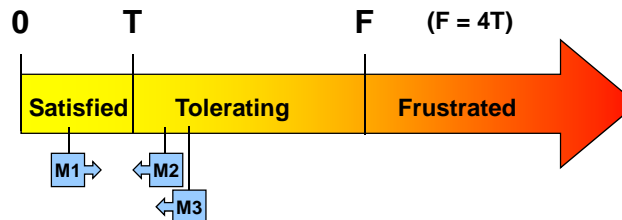
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Slide 7

What is a T Marker?



Performance Zone Boundaries



- A T Marker (TM) is an indicator of the user satisfied-tolerating boundary for an application
- Some T Markers have a greater than or less than property
- Multiple T Markers can be used to converge on an initial T value

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Slide 8

T Marker Alternatives



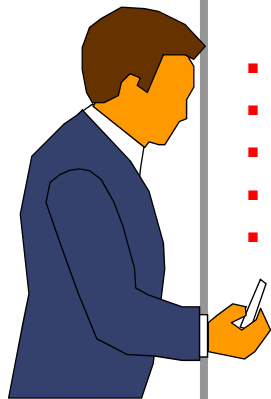
1. Default Value
2. Empirical Data
3. User Behavior Model
4. Outside References
5. Observing the User
6. Controlled Performance Experiment
7. Best Time Multiple
8. Frustration Indicator
9. Interview Stakeholders
10. Mathematical Inflection Point

Major Website Case Study: Initial T Selections



	T Markers From Three Sources			Initial T Selection	
Circle # indicates setting T method	9 Survey Targets	10 Measured (T Inflection)	3 Behavior Model Voting	T Markers Average	Consensus Initial Ts
Home	6.5	4.4	8	6.3	5
Search	2.7	1.3	2	2.0	2
My Page	5.8	2.9	6	4.9	5
Shopping	6.3	6.7	16	9.7	7
Community	12.4	10.4	9	10.6	9

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Where Apdex is Applied



Applicable measurements exist in each green cell

	Desktop	WAN (private or Internet)	Data Center Edge	Web Server	App Server	Database Server
Task	X	X	X	X		
Turn		X	X	X	X	
Packet		X	X			X (DB call)

Apdex is already being applied in each cell with an X

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Slide 12

Different T Values at Each Tier



Typical Apdex T in seconds

	Desktop	WAN (private or Internet)	Data Center Edge	Web Server	App Server	Database Server
Task	2 – 12	2 – 10				
Turn		0.2 – 1.0	0.1 – 0.8	0.1 – 0.8	0.1 – 0.8	
Packet		0.1 – 0.3				0.01 - 0.05

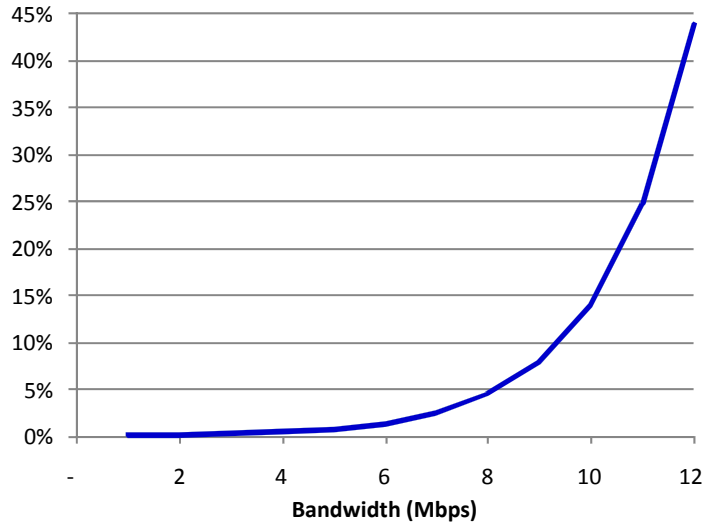
Values supplied by Apdex members

Extending Apdex Beyond Response Time



- **Fundamentally Apdex is a way to present performance**
 - Represented by many measurements
 - Of a service function
 - That can be grouped into 3 performance zones
- **The formula can be applied to many services**
 - Response Time: Packet, Turn, or Task
 - Bandwidth
 - Loss
 - Jitter
 - Other infrastructure metrics
 - Business metrics

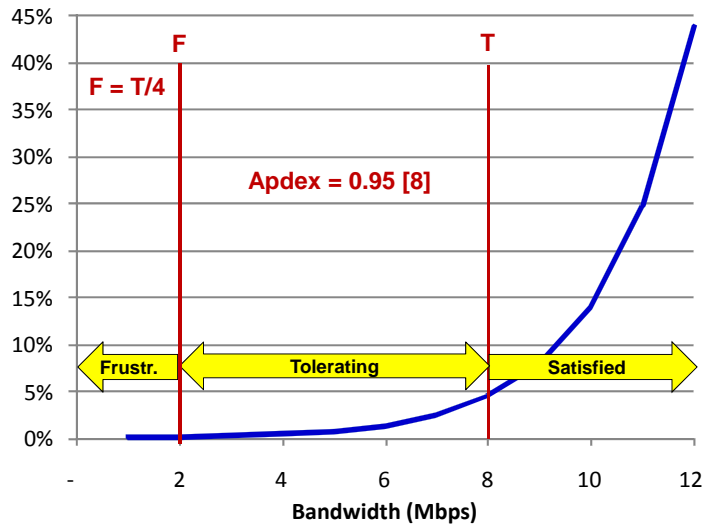
Apdex Applied to Bandwidth



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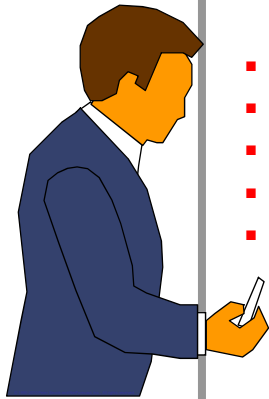
Apdex Applied to Bandwidth



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Outline

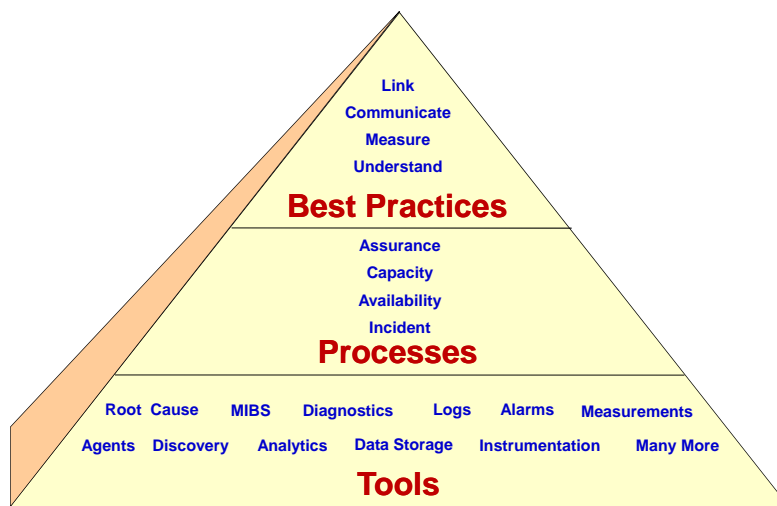


- Apdex Overview
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Performance Management Layers



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Source: NetForecast

Slide 18

Service Level Management as Defined by ITIL



- **SLR – Service Level Requirement**
 - What the business needs

- **SLO – Service Level Objective**
 - Business need in IT terms

- **SLT – Service Level Target**
 - Goal in measurements of the IT terms

- **SLA – Service Level Agreement**
 - Delivery terms and conditions added



Different types of reports are applied along this spectrum

Apdex Mapped Into ITIL SLM



- **SLR – Service Level Requirement**
 - Apdex methodology defines 10+ ways to map requirements

- **SLO – Service Level Objective**
 - This is Apdex T

- **SLT – Service Level Target**
 - This is the Apdex score that you should be above

- **SLA – Service Level Agreement**
 - This is the window of time when the Apdex score matters

Apdex T is not the SLA!

Apdex in Each Part of ITIL SLM



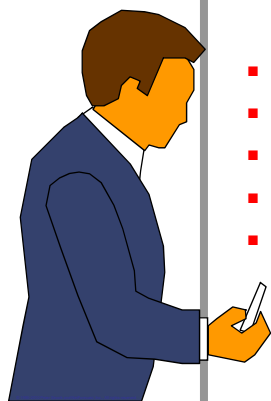
Your organization will need to implement a process to work down this table

This Webinar Covered

	KPI	Report
SLR	From 10-ways to define T	Initial T agreement
SLO	Apdex T	Formal T agreement
SLT	Apdex Score Goal	Report of Apdex scores
SLA	Percent Score Goal is met	Apdex-based SLA report

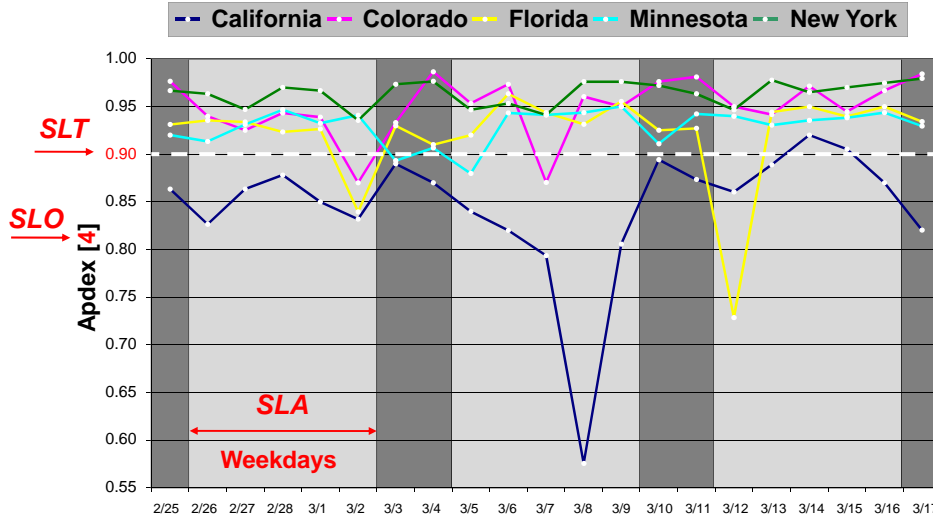
Apdex is listed in the KPI Library
See <http://kpiilibrary.com/>

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Case Study: Web Service Apdex Report

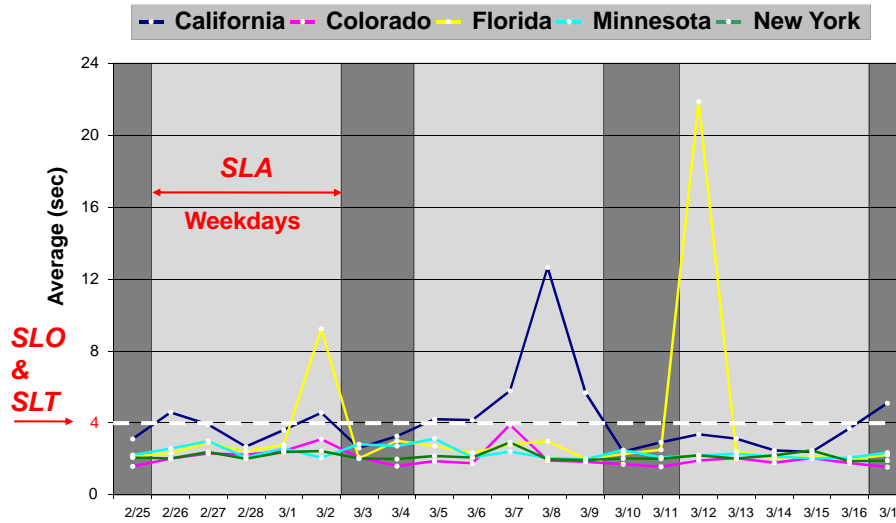


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Source: NetForecast

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Not Using Apdex: Average With Threshold

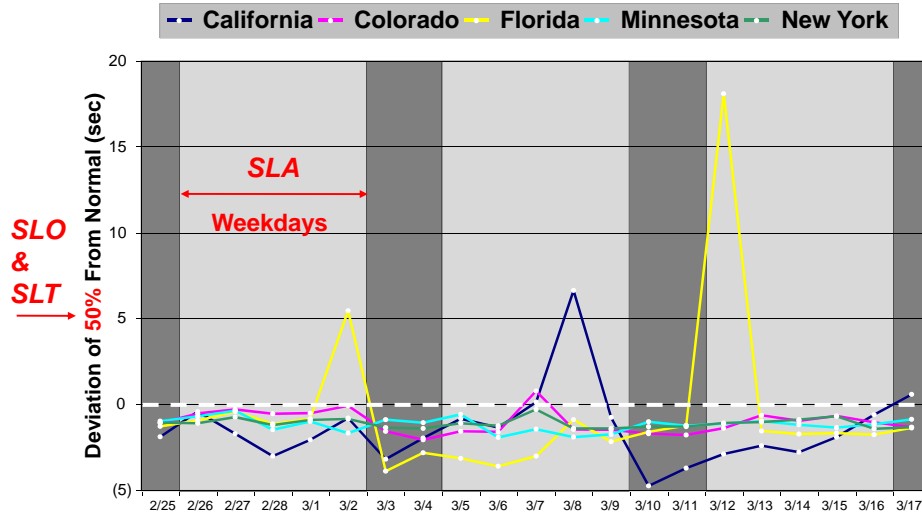


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Not Using Apdex: Deviation From Normal



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Very Different SLA Compliance Reports



SLA compliance report is the percentage of days that the SLA was met
(5 states, 5 days per week, 3 weeks in the report = 75 state-days)

	Apdex	Averages	Deviation from Normal
SLO	= 4 sec	<= 4 sec	>= 50%
SLT	>= 0.9 Score	N/A	N/A
SLA	Weekdays	Weekdays	Weekdays
SLA Compliance	76%	88%	93%

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Source: NetForecast

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Case Study: e-Government Portal



Apdex Report Group

Begin Date Time: 9/1/2008 12:00 AM End Date Time: 10/1/2008 12:00 AM Interval: Hourly

Server: CACWAZ01.IIS 6.0 BusinessGroup: BG-All

URL: * Target Threshold (sec): 5

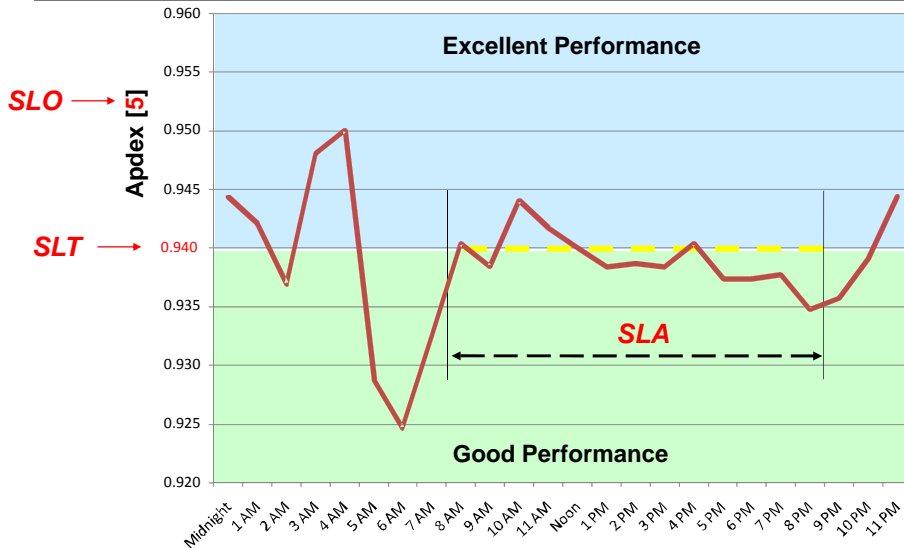
Apdex Report

Interval	Apdex	#Page Hits	RtAvg
Overall	0.94 [5]	544718	6.29
9/1/2008 12:00:00 AM	0.95 [5]	230	5.38
9/1/2008 1:00:00 AM	0.99 [5]	139	3.17
9/1/2008 2:00:00 AM	0.91 [5]*	90	6.11
9/1/2008 3:00:00 AM	0.85 [5]*	94	9.61
9/1/2008 4:00:00 AM	0.91 [5]*	61	9.14
9/1/2008 5:00:00 AM	0.95 [5]*	54	4.72
9/1/2008 6:00:00 AM	0.84 [5]*	32	19.57
9/1/2008 7:00:00 AM	0.94 [5]	264	10.70
9/1/2008 8:00:00 AM	0.95 [5]	321	6.11
9/1/2008 9:00:00 AM	0.94 [5]	604	6.93
9/1/2008 10:00:00 AM	0.94 [5]	671	7.31
9/1/2008 11:00:00 AM	0.94 [5]	442	6.16

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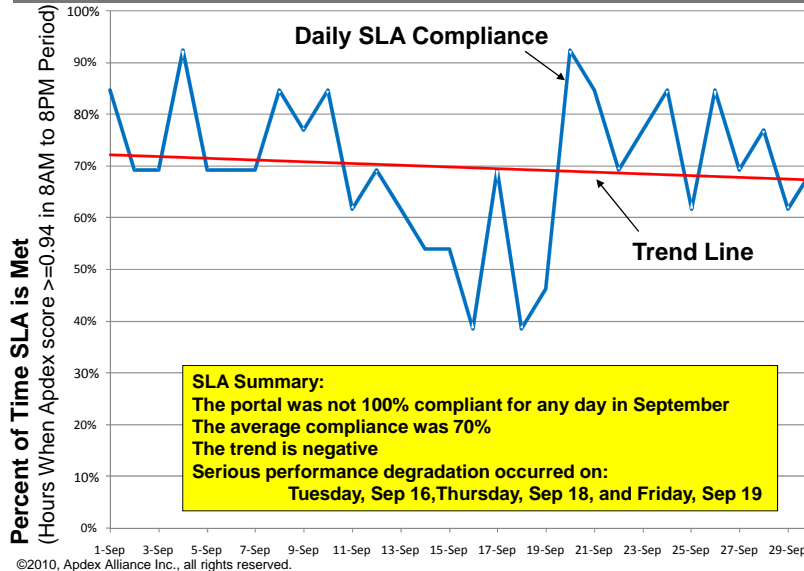
e-Government Portal Apdex Daily Report



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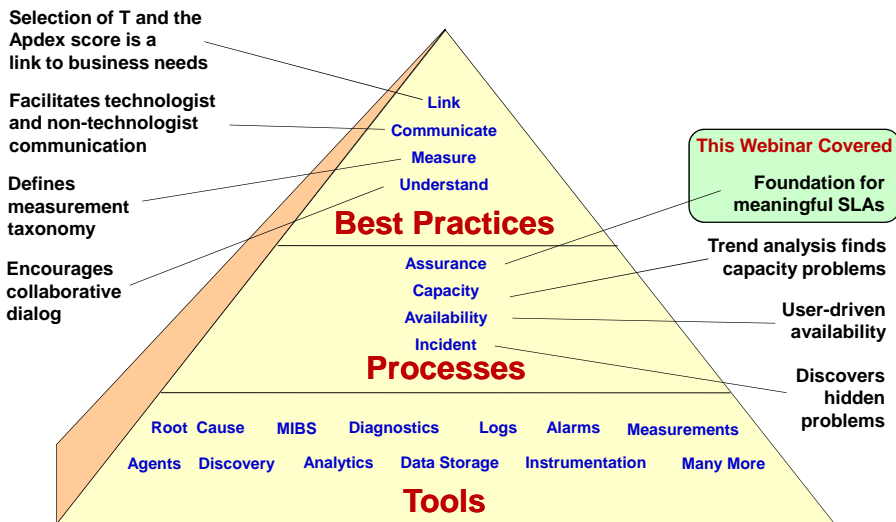
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e-Government Portal SLA Compliance Report



Slide 29

Apdex Helps Performance Management



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Source: NetForecast

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Questions and Answers

Go to www.apdex.org for more information
Join the dialog at the Apex Exchange <http://apdex.org/blog/>



Apdex Alliance Facts

Invented: by Peter Sevcik, first articles published in Jul 2002 and Nov 2003

Alliance founded: 2004

Alliance structure: non-profit organization

Objective: Define and promote effective performance reporting methods

Technology: Open standard freely available to all

Sponsors: 27 companies since 2004

Members: 2,000 individuals interested in following and implementing Apdex